FIG. 1

```
                     |→
  1   AAQPARRARR  TKLFTHRSSV  STTSTPGTPT  VYLGASKTPA  SIFGPSAASH

 51   LLILFTLNFT  ITNLRYEENM  WPGSRKFNTT  ERVLQGLLRP  LFRNTSVGPL

101   YSGCRLILLR  PEKDGEATGV  DAICTHRPDP  TGPGLDREQL  YLELSQLTHS
                              ←|→
151   ITELGPYTLD  RDSLYVNGFT  HRSSVPTTST  GVVSEEPFTL. NFYINNLRYN

201   ADMGQPGSLK  FNITDNVNKH  LLSPLFQRSS  LGARYTGCRV  IALRSVKNGA

251   FTRVDLLCTY  LQPLSGPGLP  IKQVFHELSQ  QTHGITRLGP  YSLDKDSLYL
      ←|→
301   NGYNEPGPDE. PPTTPKPATT  FLPPLSEATT  AMGYHLKTLT  LHFTISNLQY

351   SPDMGKGSAT  FNSTEGVLQH  LLRPLFQKSS  MGPFYLGCQL  ISLRPEKDGA

401   ATGVDTTCTY  HPDEVGPGLD  IQQLYWELSQ  LTHGVTQLGF  YVLDRDSLFI
      ←|
451   NGYAPQNLSI  RGEYQINFHI  VNMNLSNPDP  TSSEYITLLR  DIQDKVTTLY

501   KGSQLHDTFR  FCLVTNLTMD  SVLVTVKALF  SSNLQPSLVE  QVFLQKTINA

551   SFHMLGSTYQ  LVDIHVTEME  SSVYQPTSSS  STQHPYLNFT  ITNLPYSQDK

601   AQPGTTNYQR  NKRNIEDALN  QLFRNSSIKS  YFSDCQVSTF  RSVPNRHHTG

651   VDSLCNFSPL  ARRVDRVAIY  EEFLRMTRNG  TQLQNFTLDR  SSVLVDGYFP

701   NRNEPLTGNS  ADIQHSGGRS  SLEGPRFEQK  LISEEDLNMH  TGHHHHHH ·
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FIG. 2

```
  1  AAQPARRARR TKLFTHRSSV STTSTPGTPT VYLGASKTPA SIFGPSAASH
 51  LLILFYLNFT ITNLRYEERM WRGSRKYNTT ERVLQGLLRP LFXNTSVGPL
101  YSGCRLTLLR PEKDGEATGV DAICTHRPDP TGEGLDREOL YLELSOLTHS
151  ITELGPYTLD RDSLYVNGFT HRSSVPTTST GVVSEEPFTL NFTYNLRYM
201  ADMGOPGSLK FNITTDNVMKH LLSPLFORSS LGARYTGCRV IALRSVKNGA
251  ETRVDLLCTY LOPLSGRGLP INOVFHHLSO OTRGITRLGP YSLDKDSLYL
301  NGYNERGPDE PPTTPKPATT FLPPLSEATT AMGYHLKTLT LNFTISNLOY
351  SPDMGKGSAT FNSTRGVLOH LLRPLFORSS MGPFYLGCOL ISLRPEKDGA
401  ATGVDTTCTY HPDPVGRGLD IOOLYNELSO LTRGVTOLGF YVLORDSLFI
451  NGYAPONLSI RGEYOINFHI VNHNLSNPDP TSSEYITLLR DIODXVTTLY
501  KQSOLHDTFR FCLVTNLTMD SVLVTVKALF SSNLOPSLVE OVFLDXTLNA
551  SFHWLGSTYO LVDIHVTEME SSVYOPTSSS STOHFYLNFT ITNLPYSOOK
601  AOPGTTNYOR NKRNIEDALN OLFRNSSIKS XFSDCOVSTF RSVPXRHHTG
651  VDSLCNFSFL ARRVDRVAIX ELHTLRHTRHG TOLONITULDR SSYLYDGYFR
701  NRNEFLTGNS DLPFWAVILI GLAGLLGLIT CLICGVLVTT HHHKKEGEYN
751  VOOOCPGYYO SHLDLEDLON SADIOHSGGR SSLEGPRFEQ KLISEEDLNM
801  HTGHHHHH
```

FIG. 3

IC$_{50}$ Values
117.1 = >1mg/ml
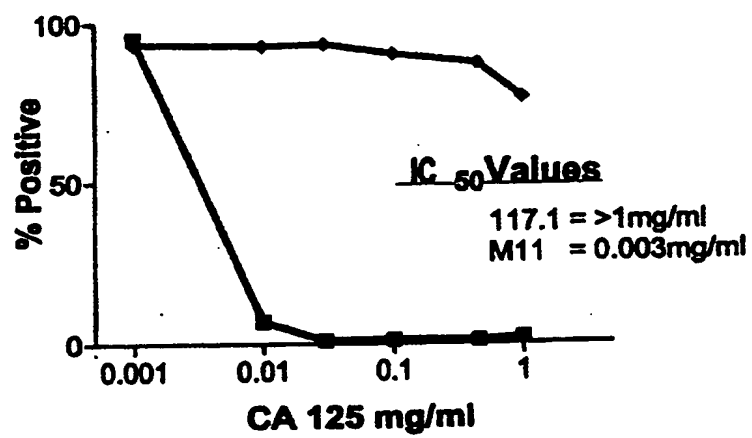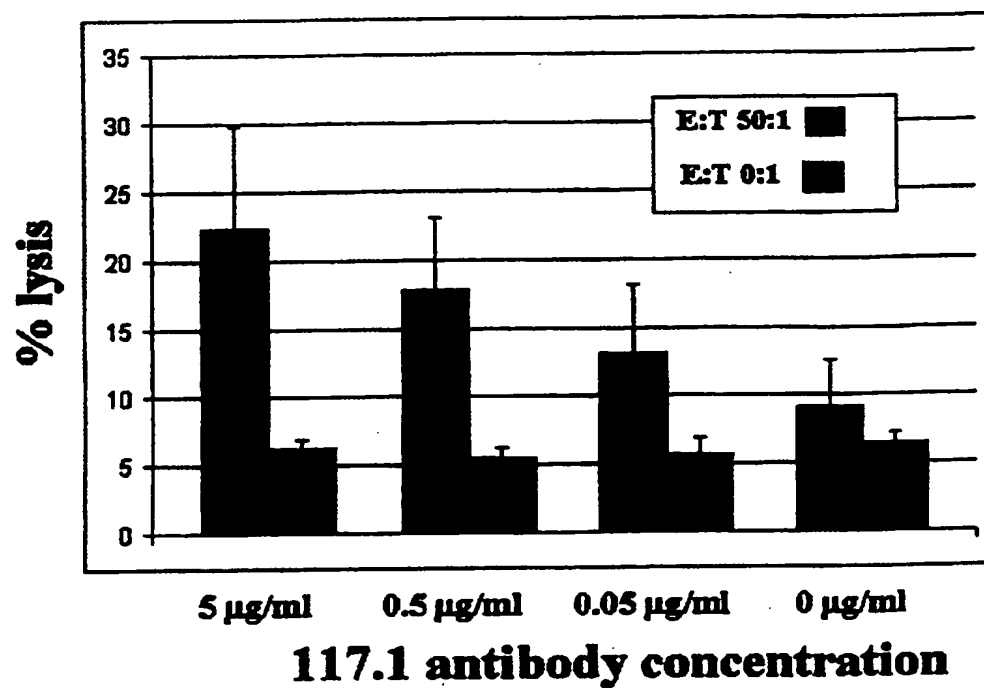M11 = 0.003mg/ml

FIG. 4

117.1 antibody concentration

FIG. 5A

117.1 Light chain:

ATGAAGTTGCCTGTTAGGCTGTTGGTGCTGATGTTCTGGATTCCTGGTTCCAGCA
GTGATGCTGTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCA
GGCCTCCATCTCTTGCAGATCTAGTCAGAGCCTTGTACACAGTAATGGAAACACC
TATTTACATTGGTACCTGCAGAAGCCAGGCCAGTCTCCAAAACTCCTGATCTACA
AAGTTTCCAACCGATTTTCTGGGGTCCCAGACAGGTTCAGTGGCAGTGGATCAGG
GACAGATTTCACACTCAGGATCAGCAGAGTGGAGGCTGAGGATCTGGGAGTTTA
TTTCTGCTCTCAAAGTAGATATGTTCCGTGGACGTTCGGTGGAGGCACCAAGCTG
GAAATCAAA

FIG. 5B

117.1 Heavy chain:

ATGGGCAGGCTTACTTCTTCATTCCTGCTACTGATTGTCCCTGCATATGTCCTGTC
CCAGGTTACTCTGAAAGAGTCTGGCCCTGGGATATTGCAGCCCTCCCAGACCCTC
AGTCTGACTTGTTCTTTCTCTGGGTTTTCACTGAGCACTCCTGGTATGGGTGTAGG
CTGGATTCGTCAGCCATCAGGGAAGGGTCTGGAGTGGCTGGCACACATTTGGTG
GGATGATTTCAAGCGCGATAATCCAGCCCTTAAGAGCCGACTGACTATCTCTAAG
GATACCTCCAGCAGCCAGGTTTTCCTCAAAATCGCCAGTGTGGACACTGCAGATA
CTGCCACATATTACTGTGTTCGAGTGGATGGTAACTTCCTCTCCTGGTATTTCGAT
GTCTGGGGCGCTGGGACCACGGTCACCGTCTCCTCA

FIG. 5C

117.1 Light chain:

MKLPVRLLVLMFWIPGSSSDAVMTQTPLSLPVSLGDQASISCRSSQSLVHSNGNTYL
HWYLQKPGQSPKLLIYKVSNRFSGVPDRFSGSGSGTDFTLRISRVEAEDLGVYFCSQS
RYVPWTFGGGTKLEIK

FIG. 5D

117.1 Heavy chain:

MGRLTSSFLLLIVPAYVLSQVTLKESGPGILQPSQTLSLTCSFSGFSLSTPGMGVGWIR
QPSGKGLEWLAHIWWDDFKRDNPALKSRLTISKDTSSSQVFLKIASVDTADTATYYC
VRVDGNFLSWYFDYWGAGTTVTVSS

FIG. 6A

368.1 Light chain :
ATGAAGTTGCCTGTTAGGCTGTTGGTGCTGATGTTCTGGATTCCTGCTTCCAGCAG
TGATGTTGTGATGACCCAAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAA
GCCTCCATCTCTTGCAGATCTAGTCAGAGCCTTGAACGCACTAATGGAAACACCT
ATTTACATTGGTACCTGCAGAAGCCAGGCCAGTCTCCAAAACTCCTGATCTACAA
AGTTTCCAGCCGATTTTCTGGGGTCCCAGATAGGTTCAGTGGCAGTGGATCAGGG
ACAGATTTCACACTCAAGATCAGTAGAGTGGAGGCTGAGGATCTGGGAATTTATT
TCTGTTCTCAAACTACACATGGTCCTCCGACGTGCGGTGGAGGCACCAAGCTGGA
AATCAAA

FIG. 6B

368.1 Heavy chain:
ATGGGATGGATCTGGATCTTTCTCTTCCTCCTGTCAGGAACTGCAGGTGTCCACTC
TGAGGTCCAGCTGCAGCAGTCTGGACCTGAGTTAGTGAGGACTGGGGCTTCAGT
GAAGATATCCTGCAAGGCTTCTGGTTACTCATTCACTGGTTTCTACATGCACTGG
GTCAAGCAGAGCCTTGGAAAGAGCCTTGAGTGGATTGGATATGTTAGTTGTTACA
CTGGTGCTACTACCTACACCCAGAAGTTCAAGGGCAAGGCCACATTTACTGTTGA
CACATCCTCCAGCACAGCCTACATGCAACTCAACAGCCTGACATCTGAAGACTCT
GCGGTCTATTACTGTGCAAGAGAAGGGGATTACTATTCTATGGACTTCTGGGGTC
AAGGAACCTCAGTCACCGTCTCCTCA

FIG. 6C

368.1 Light chain:
MKLPVRLLVLMFWIPASSSDVVMTQTPLSLPVSLGDQASISCRSSQSLERTNGNTYLH
WYLQKPGQSPKLLIYKVSSRFSGVPDRFSGSGSGTDFTLKISRVEAEDLGIYFCSQTTH
GPPTCGGGTKLEIK

FIG. 6D

368.1 Heavy chain:
MGWIWIFLFLLSGTAGVHSEVQLQQSGPELVRTGASVKISCKASGYSFTGFYMHWV
KQSLGKSLEWIGYVSCYTGATTYTQKFKGKATFTVDTSSSTAYMQLNSLTSEDSAVY
YCAREGDYYSMDFWGQGTSVTVSS

FIG. 7A

501.1 Light chain:
ATGGACATGAGGGCCCCTGCTCAGTTTTTTTGGGATCTTGTTGCTCTGGTTTCCAGG
TATCAGATGTGACATCAAGATGACCCAGTCTCCATCGTCCATTTATGCATCGCTG
GGAGAGAGGGTCACTATAACTTGCAAGGCGAGTCAGGACATTAAAAGCTATTTA
AGCTGGTACCAACAGAAACCCTGGAAATCTCCTAAGACCCTGATCTATTATGCAA
CAACCTTGGCAGATGGGGTCCCATCAAGATTCAGTGGCAGTGGATCTGGGCAAG
ATTATTCTCTAATCATCAACAGCCTGGAGTCTGACGATATAGCTACTTATTTCTGT
CTACACCATGATGAGAGCCCATTCACGTTCGGCTCGGGGACAAAATTGGAAATA
AA

FIG. 7B

501.1 Heavy chain:
ATGGCTTGGGGTGTGGACCTTGCTGTTCCTGATGGCAGCTGCCCAAAGTGCCCAAG
CACAGATCCAGTTGGTGCAGTCTGGACCTGAGCTGAAGAAGCCTGGAGAGACAG
TCCAGATCTCCTGCAAGGCTTCTGGCTATATCTTCACAGACTATGGAATGAACTG
GGTGAAACAGGCTCCAGGAAAGGGTTTAAAATGGATGGGCTGTATAAACACCTA
CACTGGAGAGACAATATATAGTGATGACTTCAGGGGACGGTTTGCCATCTCTTTG
GAAACCTCTGCCAGCACTGCCTTTATTCAGATCAACAACCTCAAAAATGAGGACG
CGGCAACATATTTCTGTGCAAGGGGAAATTACAGGGATGCTATTGACTATTGGGG
TCAAGGAACCTCAGTCACCGTCTCCTCA

FIG. 7C

501.1 Light chain:
MDMRAPAQFFGILLLWFPGIRCDIKMTQSPSSIYASLGERVTITCKASQDIKSYLSWY
QQKPWKSPKTLIYYATTLADGVPSRFSGSGSGQDYSLIINSLESDDIATYFCLHHDESP
FTFGSGTKLEI

FIG. 7D

501.1 Heavy chain:
MAWVWTLLFLMAAAQSAQAQIQLVQSGPELKKPGETVQISCKASGYIFTDYGMNW
VKQAPGKGLKWMGCINTYTGETIYSDDFRGRFAISLETSASTAFIQINNLKNEDAATY
FCARGNYRDAIDYWGQGTSVTVSS

FIG. 8A

776.1 Light chain:
ATGGATTTTCAAGTGCAGATTTTCAGCTTCCTGCTAATCAGTGCTTCAGTCATAAT
GTCCAGAGGACAAATTGTTCTCTCCCAGTCTCCAGCAATCCTGTTTGCATCTCCA
GGGGAGACGGTCACAATGACTTGCAGGGCCAGTTCAAGTGTAATTTACATGTGTT
GGAATCAGCAGAAGCCAGGATCCTCCCCCAAACCCTGGATTTATGGCACATCCA
CCCTGGCTTCTGGAGTCCCTACTCGCTTCAGTGGCAGTGGGTCTGGGACCTCTTA
CTCTCTCACAATCAGCAGAGTAGAGGCTGAAGATGCTGCCACTTATTACTGCCAG
CAGTGGAGTAGTAACCCATTCACGTTCGGCTCGGGGACAAAGTTGGAAATAAA

FIG. 8B

776.1 Heavy chain:
ATGGGATGGAGCTGGATCTTTCTCTTCCTCCTGTCAGGAACTGCAGGCGTCCACT
CTGAGGTCCAGCTTCAGCAGTCAGGACCTGAGCTGGTGAAACCTGGGGCCTCAG
TGAAGATATCCTGCAAGGCTTCTGGATACACATTCACTGACTACAACATTCACTG
GGTGAAACAGAGCCATGGAAAGATCCTTGAGTGGATTGGATATATTTATCCTTAT
AATGGTGTTTCTGACTACAACCAGAATTTCAAGAGCAAGGCCACATTGATTGTAG
ACAATTCCTCCAACACAGCCTACATGGAACTCCGCAGCCTGACATCTGAGGACTC
TGCAGTCTATTATTGTGCAAGATGGGACTTCGGTAGTGGCTACTACTTTGACTAC
TGGGGCCAAGGCACCACTCTCACAGTCTCCTCA

FIG. 8C

776.1 Light chain:
MDFQVQIFSFLLISASVIMSRGQIVLSQSPAILFASPGETVTMTCRASSSVTYMCWNQQ
KPGSSPKPWIYGTSTLASGVPTRFSGSGSGTSYSLTISRVEAEDAATYYCQQWSSNPF
TFGSGTKLEI

FIG. 8D

776.1 Heavy chain:
MGWSWIFLFLLSGTAGVHSEVQLQQSGPELVKPGASVKISCKASGYTFTDYNI
HWVKQSHGKILEWIGYIYPYNGVSDYNQNFKSKATLIVDNSSNTAYMELRSLTSEDS
AVYYCARWDFGSGYYFDYWGQGTTLTVSS

FIG. 9A

725.1 LC

ATGGATTTTCAAGTGCAGATTTTCAGCTTCCTGCTAATCAGTGCTTCAGTCATAAT
GTCCAGAGGACAAATTATTCTCTCCCAGTCTCCAGCAATCCTGTCTGCATCTCCA
GGGGAGAAGGTCACAATGACTTGCAGGGCCAGTTCAAGTGTAAGTTCCATTCAC
TGGTACCAGCAGAAGCCAGAATCCTCCCCCAAACCCTGGATTTACGCCACATCCA
ACCTGGCTTCTGGAGTCCCTGTTCGCTTCAGTGGCAGTGGGTCTGGGACCTCTTAT
ACTCTCACAATCAGCAGAATGGAGGCTGCAGATGCTGCCACTTATTACTGCCAGC
AGTGGAGTATTGATCCAGCCACGTTCGGAGGGGGGGACCAAGCTGGAAATAAA

FIG. 9B

725.1 HC

ATGGCTTGGGTGTGGACCTTGCTATTCCTGATGGCAGCTGCCCAAAAGTGCCCAAG
CACAGATCCAGTTGGTGCAGTCTGGACCTGAACTGAAGAAGCCTGGAGAGACAG
TCAAGATCTCCTGCAAGGCTTCTGGATATTCCTTCACAAACTATGGAATGAACTG
GGTGAAGCAGGCTCCAGGGAAGGGTTTAAAGTGGATGGGCTGGATAAACGCCTA
CATTGGAGAGCCAACATATGCTGATGACTTCAAGGGACGATTTGCCTTCTCTCTG
GAAGCCTCTACCCACACTGCCTATTTGCAGATCAACAGCCTCAAAAGTGAGGAC
ACGGCTACATATTTCTGTGCAAGTGGGGGGTAACTCCCTTGACTTTTGGGGCCAAG
GCACCACTCTCACAGTCTCCTCAG

FIG. 9C

725.1 LC

MDFQVQIFSFLLISASVIMSRGQIILSQSPAILSASPGEKVTMTCRASSSVSSIHWYQQK
PESSPKPWIYATSNLASGVPVRFSGSGSGTSYTLTISRMEAADAATYYCQQWSIDPAT
FGGGTKLEI

FIG. 9D

725.1 HC

MAWVWTLLFLMAAAQSAQAQIQLVQSGPELKKPGETVKISCKASGYSFTNYGMNW
VKQAPGKGLKWMGWINAYIGEPTYADDFKGRFAFSLEASTHTAYLQINSLKSEDTA
TYFCASGGNSLDFWGQGTTLTVSS

FIG. 10A

16H9 LC

ATGGATTTTCAGGTGCAGATTTTCAGCTTCCTGCTAATCAGTGCCTCAGTCATAAT
GTCCAGAGGACAAATTGTTCTCACCCAGTCTCCAGCAATCATGTCTGCATCTCTA
GGGGAACGGGTCACCATGACCTGCACTGCCAGCTCAAGTGTAAGTTCCAGTTACT
TGCACTGGTACCAGCAGAAGCCAGGATCCTCCCCCAAACTCTGGATTTATAGCAC
ATCCAACCTGGCTTCTGGAGTCCCAGCTCGCTTCAGTGGCAGTGGGTCTGGGACC
TCTTACTCTCTCACAATCAGCAGCATGGAGGCTGAAGATGCTGCCACTTATTACT
GCCACCAGTATCATCGTTCCCCATTCACGTTCGGCTCGGGGACAAAGTTGGAAAT
AAA

FIG. 10B

16H9 HC

ATGAAATGCAGCTGGGGTTATCTTCTTCCTGATGGCAGTGGTTACAGGGGGTCAATT
CAGAGGTTCAGCTGCAGCAGTCTGGGGCAGAGCTTGTGAAGCCAGGGGCCTCAG
TCAAGTTGTCCTGCACAGCTTCTGGCTTCAACATTAAAGACACCTATATGCACTG
GGTGAAGCAGAGGCCTGAACAGGGCCTGGAGTGGATTGGAAGGATTGATCCTGC
GAATGGTAATACTAAATATGACCCGAAGTTCCAGGGCAAGGCCACTATAACAGC
AGACACATCCTCCAACACAGCCTACGTGCAGCTCAGCAGCCTGACATCTGAGGA
CACTGCCGTCTATTACTGTGCTAGTAGTGACATCTACTATGGTAACCCCGGGGGGG
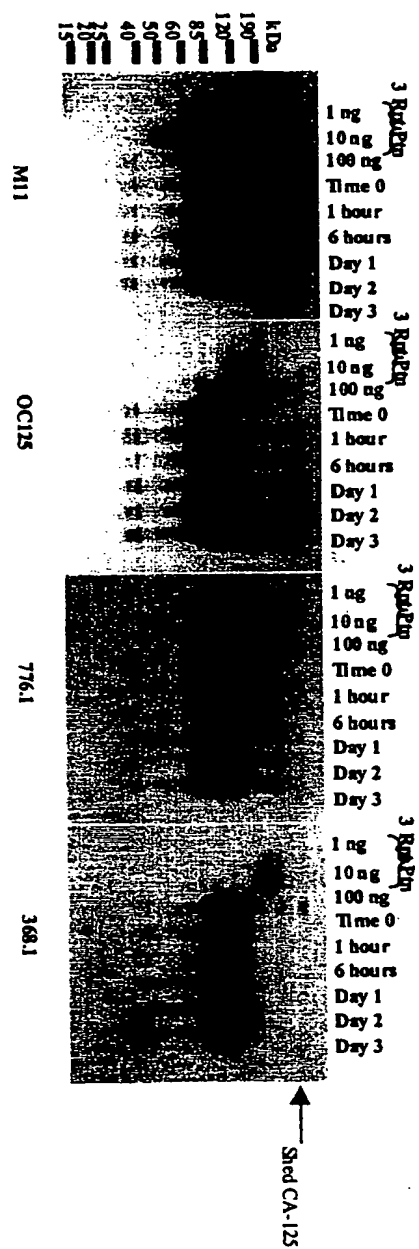TTTGCTTACTGGGGCCAAGGGACTCTGGTCACTGTCTCTGCA

FIG. 10C

16H9 LC

MDFQVQIFSFLLISASVIMSRGQIVLTQSPAIMSASLGERVTMTCTASSSVSSSYLHWY
QQKPGSSPKLWIYSTSNLASGVPARFSGSGSGTSYSLTISSMEAEDAATYYCHQYHRS
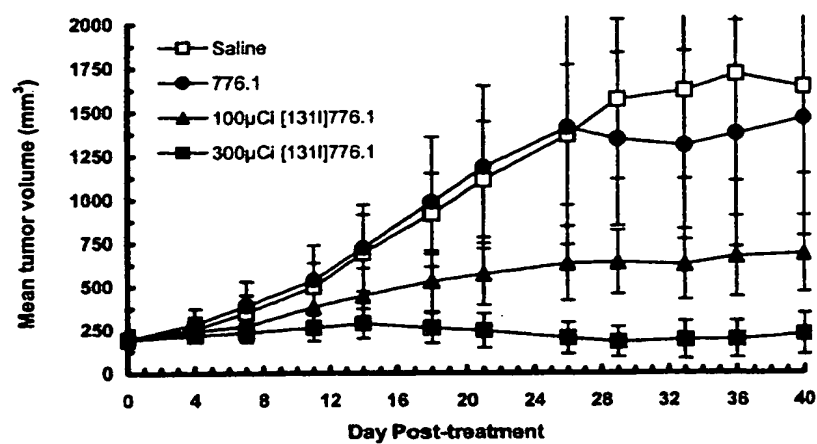PFTFGSGTKLEI

FIG. 10D

16H9 HC

MKCSWVIFFLMAVVTGVNSEVQLQQSGAELVKPGASVKLSCTASGFNIKDTYMHW
VKQRPEQGLEWIGRIDPANGNTKYDPKFQGKATITADTSSNTAYVQLSSLTSEDTAV
YYCASSDIYYGNPGGFAYWGQGTLVTVSA

Figure 11

Figure 12